

AFGHANISTAN



USCENTCOM

FUSION CELL

SOVIET SURFACE TRANSPORTATION
IN AFGHANISTAN



CLASSIFIED BY: MULTIPLE SOURCES
DECLASSIFY ON: OADR

DATE OF DOCUMENT: 15 APR 1988

COPY _____ of _____

88-1119-CEN-007

SG

Incl 8

UNCLASSIFIED



**UNITED STATES CENTRAL COMMAND
MACDILL AIR FORCE BASE, FLORIDA 33608-7001**

CCFC

FOREWORD (U)

(U) In the last days of December 1979, Soviet Forces invaded the land-locked country of Afghanistan. The ease of deployment across the Afghan border at Termez, a Soviet border town that has played a significant role as an integral juncture within the Soviet/Afghanistan Lines of Communication, was by no means to become a measure of what lay ahead. Afghanistan was to become the Soviet logistics planner's nightmare.

(U) A former (US) Corps commanding general once said to his division commanders and corps staff during an exercise, "The logistician will identify on the tactical planning board, the forward edge that our troops can advance." The Soviets have quickly learned that their operations in Afghanistan have been closely tied to the capability of available logistical support. The most significant element of that logistical support has been the employment of motor transport.


(U) This paper is not intended to provide a detailed in-depth study of all Soviet military transportation operations in Afghanistan, but to provide an insight on surface transportation difficulties that have been encountered during the Soviet's lengthy occupation. It will also identify doctrinal

UNCLASSIFIED

UNCLASSIFIED

reorganizational changes implemented by Soviet logisticians that were first observed being employed in Afghanistan. It must be understood that the information used to describe logistics and motor transport operations in Afghanistan was based on analyzing collateral and open source products. Actual unit planning, including maintenance and personnel activities, is not presented.

(U) This paper is a product of the Afghan Fusion Cell and does not necessarily represent the official view of the Department of Defense, JCS, or U.S. Central Command. Comments, questions and suggestions, should be directed to USCENTCOM, ATTN: CCFC, MacDill AFB, Florida 33608-7001. Telephone: (AV) 968-6580, (KY3) 9287, (GRAY) 991-6172.


THOMAS A. LOKEN
Col, USAF
Chief, Afghan Fusion Cell

CLASSIFIED BY MULTIPLE SOURCES
DECLAS: OADR

UNCLASSIFIED

UNCLASSIFIED

TABLE OF CONTENTS (U)

Foreword	i
Table of Contents	iii
Summary	1
Introduction	3
Afghanistan - The Country	8
Movement of Logistics	13
Doctrine	13
Materiel Support Concept	15
Establishing Main Supply Routes	20
Highways	22
Soviet Main Supply Routes	23
The Supply System	26
Fuel Delivery	29
Motor Transport Operations	33
Command and Control	33
Organization	35
Convoy Operations	38
Route Difficulties	40
Route Support	43
Route Security	46
Highway Traffic Control	48
Communications	50
Conclusion	51

UNCLASSIFIED

INTRODUCTION (U)

(U) This study addresses Soviet military surface transport operations in support of 40th Army Forces in Afghanistan, from the early invasion of December 1979, through the date of publication. It will highlight, at Echelons Above the Division (EAD), transport methods of control, security, vehicle types and doctrinal applications that have been adjusted to accommodate the low intensity conflict ongoing in Afghanistan.

UNCLASSIFIED



Figure 1
Afghanistan's Regional Position

UNCLASSIFIED

Forces within the Southern TVD positioned for options in the Persian Gulf and Arabian Sea.

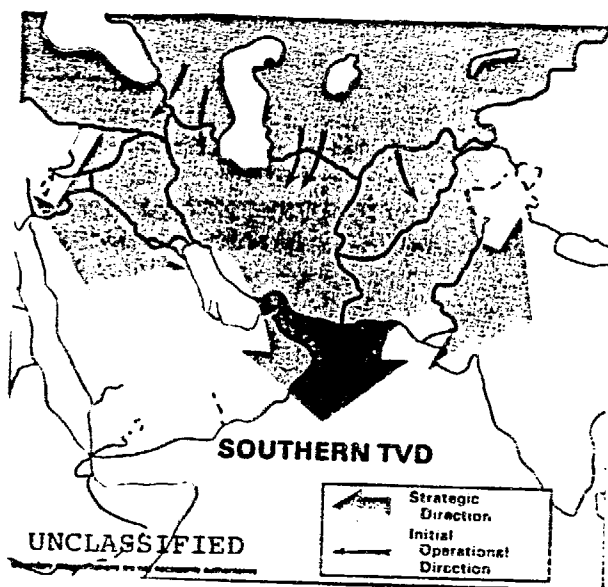


Figure 2

(U) The STVD, which has strategic responsibility over Soviet forces in Afghanistan, is one of five geographic commands within the Soviet Union. However, it has been difficult to make a reliable assessment on the quantity of direct support of resources used and consumed from STVD depots by Soviet forces in Afghanistan.

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

**AFGHANISTAN - THE COUNTRY
BACKGROUND (U)**

(U) In order to have a better appreciation for the difficulties being encountered by Soviet logistics planning staffs and motor transport operators, it is beneficial to first visualize the harsh environment of Afghanistan. (Figures 3 & 4)



UNCLASSIFIED
Figure 3



UNCLASSIFIED
Figure 4

Typical terrain encountered by Soviet Transport Operators

UNCLASSIFIED

UNCLASSIFIED

(U) Afghanistan is a land-locked country with a land mass of approximately 260,000 square miles. Population is approximately fifteen to sixteen million, of which an estimated five million refugees are reported living in neighboring Pakistan and Iran. In comparison, Afghanistan is slightly less than the size of the state of Texas. It shares borders with the Soviet Union to the north for 1,050 miles, Iran to the west for 510 miles, to the east and south with Pakistan for 1,125 miles and with China in the northeast for 50 miles. (Figure 5) The topography is dominated by the mountainous Central Highlands, with peaks in the Hindu Kush region reaching heights above 21,000 feet. Mountainous terrain covers over sixty percent of the country with the remainder being treeless flatlands and desert regions. Kabul, the capital city, is centrally located in the far eastern side of the country, along the Darya-ye-Kabul river. (Figure 6) It is also the center for the Soviet military headquarters and in-country political activities. A city with a population of over one million people, it has become a haven for those seeking the security of the large contingent of Soviet troops protecting it, its government, and the Soviet military authorities.

UNCLASSIFIED

UNCLASSIFIED



Figure 5
Terrain relief is well presented. Dominant physical features of the Central Highland traverse the country from the southwest to the northeast, where peaks of the Hindu Kush rise above 21,000 feet.

UNCLASSIFIED

UNCLASSIFIED

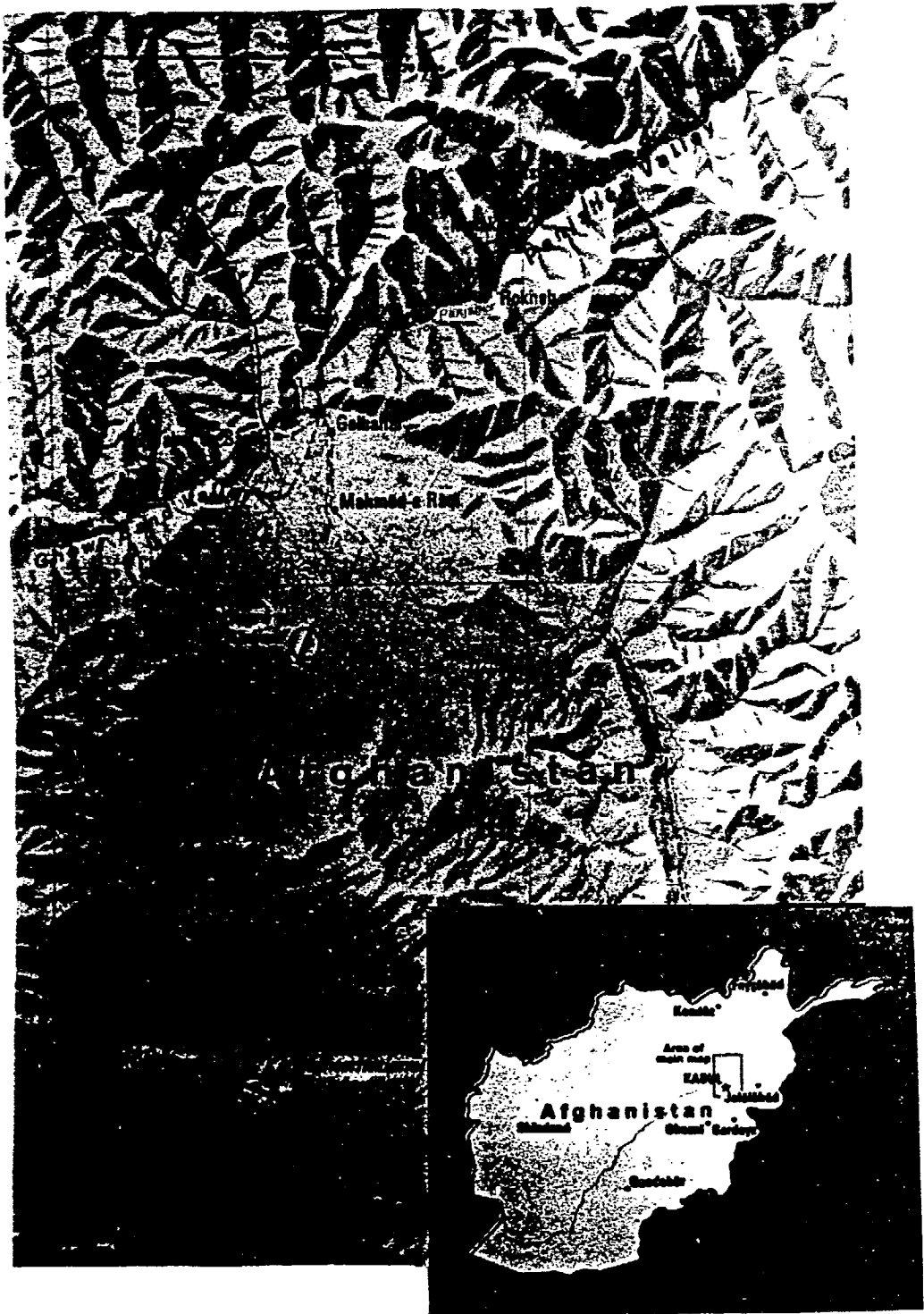


Figure 6
Kabul, Capital of Afghanistan

UNCLASSIFIED

UNCLASSIFIED

(U) The climate is basically subarctic with dry cold winters and dry summers. In winter, the higher elevations can see snow averaging five to seven feet and often closing many valley passes. Rainfall varies significantly by region ranging from fifteen inches in the southeast to four inches in the high elevations of the northeast and eastern mountain regions adjacent to Pakistan. These harsh climatic conditions and difficult terrain complicate the effectiveness of any transport system, including the toll on those who operate it.

(U) The manufacturing base exists to support agriculture and livestock industries. There are some light industries that support the Republic of Afghanistan Army with soft goods such as shoes, clothing, blankets, tents and foodstuffs, and two cement plants. There are no heavy industries that perform large scale production. Most of the planning, construction and management of these industries before the invasion were performed through foreign operations and/or ownership, and virtually all machinery and petroleum products are imported, mainly from the Soviet Union.

UNCLASSIFIED

MOVEMENT OF LOGISTICS (U)

Doctrine (U)

(U) The emphasis on Soviet logistics doctrine at the tactical level is to support a highly mobile mission-tailored force. Soviet military authorities place ultimate responsibility on commanders at **higher** echelons to fully support subordinate units with logistics. This includes the provision of supplies and services delivered by organic transportation resources of higher commands. For example, resupply from army level down to division and division down to regiment is accomplished using parent-unit assets. This forward delivery method supports the reduction in the overall number of directly assigned support forces required by subordinate tactical units. This relates to the greater "tooth-to-tail" ratio found in Soviet formations than comparable U.S. formations.

UNCLASSIFIED

(U) An article titled "Soviet Logistics Support Concept Changes," by Dr. Graham Turbiville, Jr., Phd., Soviet Army Studies Office, Combined Arms Center, Fort Leavenworth, Kansas, published in the March-April 1987 issue of Army magazine, provides an excellent overview of the changes that have been made in the transformation of the Soviet logistics support. In his article, Dr. Turbiville addresses some reasons the Soviets have taken steps to reorganize their battlefield supporting procedures. Most recently, the Soviets have taken these actions based on lessons learned in their ongoing operations in Afghanistan. Clearly emphasized is the need for "tailoring to mission, and support for sustained operations and mobility."

(U) Not only are tactical elements tailored to meet the mission, the logistics elements are also tailored to compliment the mission. The tailoring of logistics elements is more specific in divisions and regiments that are supported by respective Battalion and Company Materiel Support units. From available sources and overall assessment of Soviet logistics operations being conducted in Afghanistan, it was found that at the division level and below, logistics procedures have been basically planned for execution in a similar manner as the U.S. Division Support Command (DISCOM) doctrine. The Frontal level Materiel Support Brigade and the Independent Motor Transport Brigade, distribute directly to the Army and division depots. These procedures are the same as missions being performed by U.S. Theater Army level transportation commands and depots, which are receipt, storage and distribution of all classes of supplies.

UNCLASSIFIED

(U) The logistics tailoring will provide the capability for mobile support elements to achieve longer sustainability periods for isolated forces. Based on the situation in Afghanistan and the difficulties in operating frequent resupply convoys, the materiel concept should be viewed as a favorable initiative.

ESTABLISHING MAIN SUPPLY ROUTES (U)

(U) The first and most important mission that had to be accomplished during the invasion was to establish and secure the Main Supply Routes (MSR's) that comprise the ground LOC. This was the task being performed by the advancing columns of Motorized Rifle Divisions (MRD). If any Soviet operation was to be successful, resupply and sustainment through the LOC was of paramount importance.

(U) The limited access to rail, river and supportable and defendable highways dictated where the Soviets could place their transshipment points and depots. This also played an important

part as to where divisions and regiments could be positioned and still be effectively supported.

Highways (U)

(U) In 1979, Afghanistan had approximately 6,000 miles of roadways, of which only 1,500 miles were paved. The remainder consisted of 3,500 miles of secondary hard surface unpaved roads and approximately 2,000 miles of unpaved narrow single track roads and trails that provided access to villages not on the main arteries. Many villagers, in the difficult and rugged terrain, continue to use camels, horses and donkeys for transportation along narrow trails and roads that have been deteriorated by erosion. The Mujahedin commonly use vehicles such as Japanese made 4-wheel drive trucks to transport supplies into Afghanistan, then transfer them to pack animals if necessary, to resupply their field depots, assembly areas, and tactical sites located in the mountainous terrain.

(U) We assume the Soviets recognized that the mountainous terrain and absence of railroads would place additional burdens on equipment and slow their speed and mobility to less than doctrinal norms. However, in reality their difficulties were not associated with the amount of transport equipment available, but rather with difficulties in securing the MSR's to a degree that would allow small frequent convoy resupply operations.

THE SUPPLY SYSTEM (U)

UNCLASSIFIED



Figure 13
Location of Soviet Pipelines in Afghanistan

UNCLASSIFIED

UNCLASSIFIED

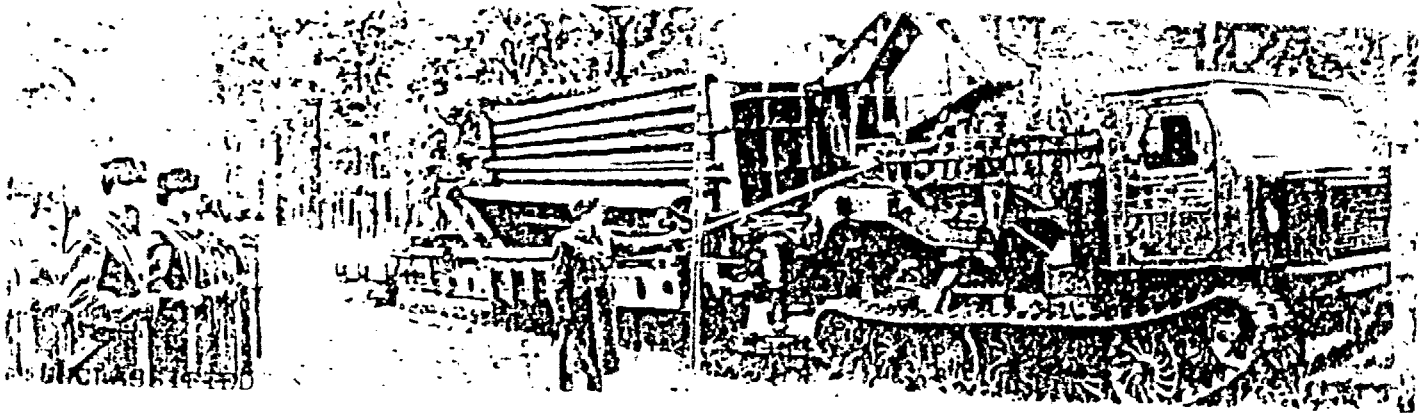


Figure 14

Soviet capabilities for laying POL pipelines.
The TUM-150 Tracked Automatic Pipelayer that can place
3 to 5 kilometers of tactical pipeline per hour.
Pipelines are highly efficient and significantly reduce
surface transport requirements.



UNCLASSIFIED

Figure 15

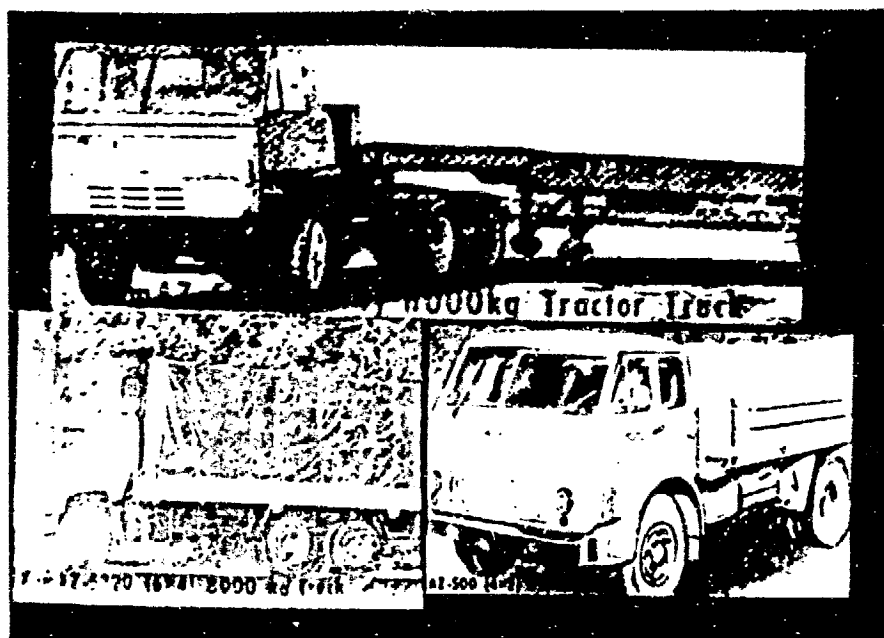
Soviet Tactical pipeline in Afghanistan.
The pipeline is vulnerable to attacks by Mujahedin.
However, with automatic shutoff valves and the ease
of repair, the effect of disruptions are quickly overcome.

UNCLASSIFIED

MOTOR TRANSPORT OPERATIONS (U)

Command and Control(U)

UNCLASSIFIED

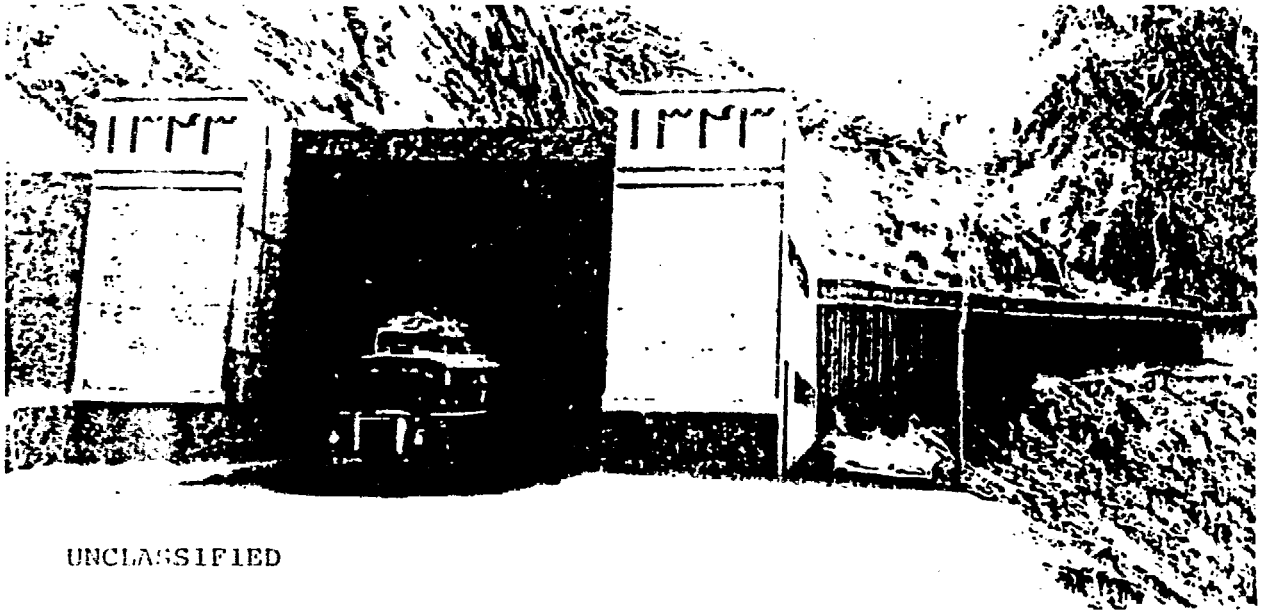


UNCLASSIFIED

Figure 18
Cargo vehicles similar to those being used in Afghanistan

UNCLASSIFIED

UNCLASSIFIED



UNCLASSIFIED

Figure 20
Entrance to Salang Tunnel

UNCLASSIFIED

UNCLASSIFIED

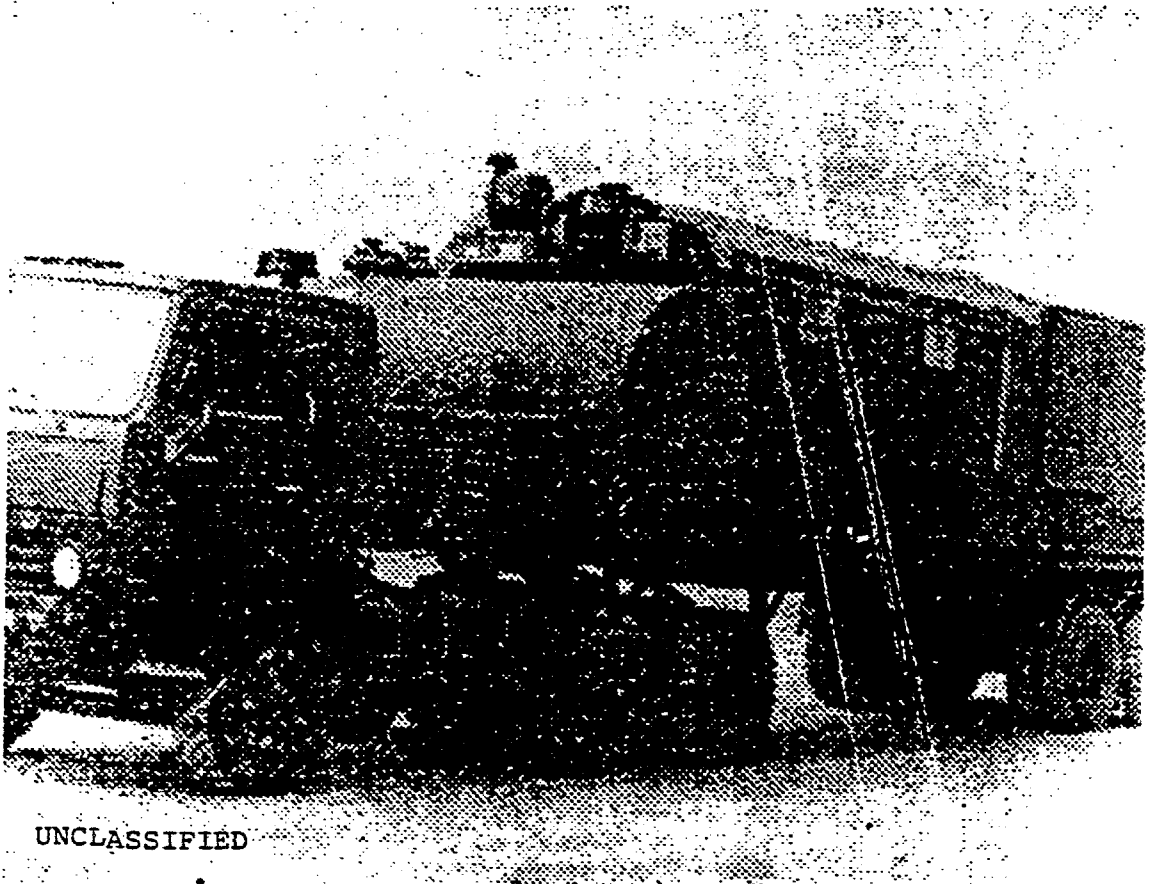


Figure 21
Soviet Mobile Support Station

UNCLASSIFIED

UNCLASSIFIED



Figure 22
Soviet Mobile Support Station

UNCLASSIFIED

UNCLASSIFIED

Figure 23
Soviet Minesweeping operations



UNCLASSIFIED

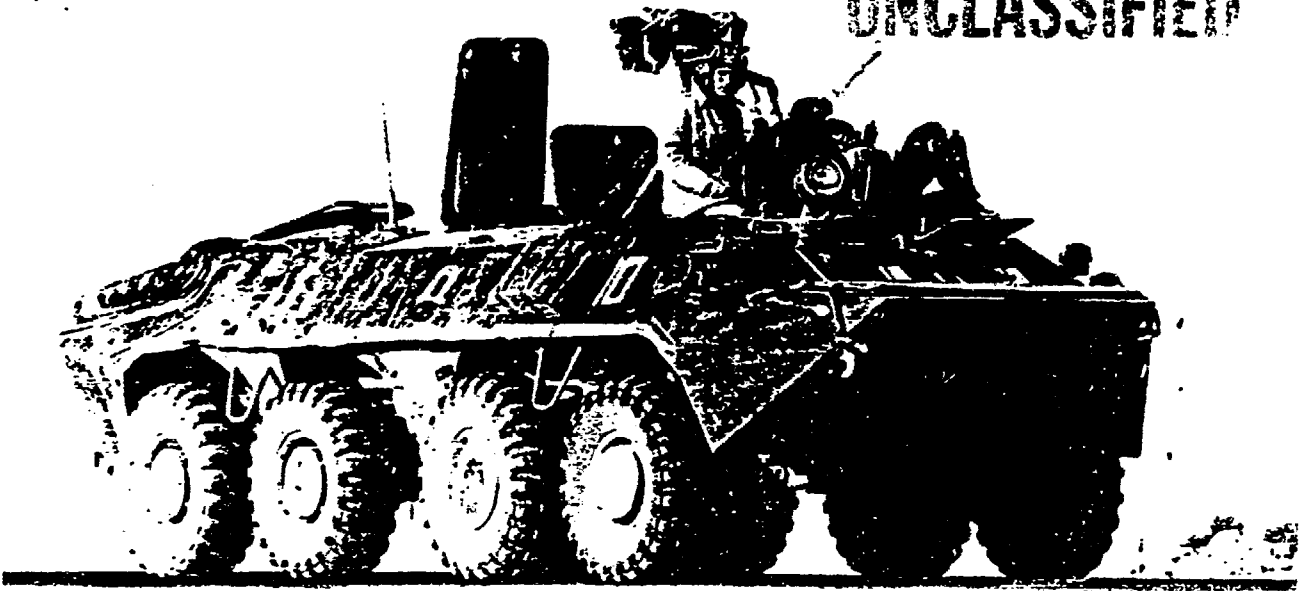
Figure 24
Soviet armed helicopters covering convoys



UNCLASSIFIED

UNCLASSIFIED

UNCLASSIFIED



UNCLASSIFIED

Figure 25
Highway route security forces and traffic control

HIGHWAY TRAFFIC CONTROL (U)

UNCLASSIFIED



UNCLASSIFIED

Figure 26
Results of a convoy after Mujahedin attack

CONCLUSIONS (U)



UNCLASSIFIED

Figure 27

These happy Soviet drivers seemed to have endured a successful journey. Upon completion of their tours in Afghanistan, many receive high commendations because of the harzardous duty driving in convoys

(u) Setting aside the problems of mismanagement, conducting movement operations in a harsh and unforgiving terrain, the scarcity of any reasonable transportation infrastructure, and a relentless foe, the Soviets have been successful in sustaining their force. Much of their success can also be contributed to patience and determination. Would they be as patient in a different scenario? Would they be able to support a larger force? How much more augmentation would be required? Hopefully, this paper has allowed one to realize the difficulties any force can

UNCLASSIFIED

encounter operating in harsh unimproved regions, and the advantages and disadvantages to the military tactician.

A Final note. (U)

(U) At the time of publication, the Soviets have signed an agreement for the withdrawal of their forces from Afghanistan. How do we know they are serious, and how will they execute a withdrawal are the questions at hand? If a withdrawal occurs, careful attention will be placed on observing the Soviet logistician's ability to direct an operation retrograding personnel and equipment, and at the same time continuing to support the forces maintaining their security.

UNCLASSIFIED

UNCLASSIFIED

DISTRIBUTION LIST
(This list is UNCLASSIFIED)

DOD AND JOINT ACTIVITIES

OSD/ISA (ASST SEC ARMITAGE) 1
JCS/CHAIRMAN 1
JCS/J-3 1
JCS/J-4 1
JCS/J-5 1
JCS/J-6 1
JCS/J-7 1
JCS/J-8 1
JSI 1
NATIONAL
DEFENSE UNIVERSITY 1
CMDT ARMED FORCES
STAFF COLLEGE 1

DIA

DIA/DB-1B 1
DIA/DE-1 1
DIA/DT-2D 1
AFMIC 1

DIA/JSI-2B 1

US ARMY

HQDA 1
COMUSARCENT 1
FOREIGN SCIENCE
AND TECHNOLOGY CENTER (FSTC) 1
CINCUSAREUR 1
CG TRADOC 1
USAITAC 1
CG 1ST SOCOM 1
CMDT US ARMY COMMAND AND
GENERAL STAFF COLLEGE/SASSO 2
CMDT US ARMY WAR COLLEGE 1
513 MIG 1

JOHN F. KENNEDY SWC 1
EUDAC 1
CDR FORSCOM 1
CDR USAITAC/AIAT-AL 1
CDR USAICS 2
CDR USAISD 2

US NAVY

CNO 1
COMUSNAVCENT 1
CMDT NAVAL WAR COLLEGE 1

UNCLASSIFIED

UNCLASSIFIED

US MARINE CORPS

CMC	1
CG I MEF	1
CMDT MCDEC	1

US AIR FORCE

HQ USAF	1
COMUSCENTAF	1
CINCUSAFE	1
CINCTAC	1
9 TIS	1
CMDT AIR WAR	
COLLEGE	1
CMDT AIR COMMAND	
AND STAFF COLLEGE	1
FOREIGN TECHNOLOGY	
DIVISION (FTD)	1

UNIFIED AND SPECIFIED COMMANDS

CINCEUR	1
CINCPAC	1
CINCSOCOM	1
CINCMAC	1
CINCSAC	1

OTHERS

CIA	
NESA	1
SOVA	1
DDO/NE	2
NIC	2
NSA	
A2	1
G9	1
STATE/INR	1

 SUBTOTAL 62
INTERNAL

FUSION CELL	2	J-3	1
SOCENT	1	J-4	1
NSA REP	1	J-5	1
CIA REP	1	HISTORIAN	1
J-2 IAN	1	DIA	1

 SUBTOTAL 11

TOTAL DISTRIBUTION 73

UNCLASSIFIED